G. R. S. IX-5]

Previous references.

1921

( )

File No. 56-21

Serial Nos 1, 1a, 2–4,

Later references.

8–10, 13, 13a, 14–16.

GENERAL AND REVENUE SECRETARIAT.

Serial Nos. 13

Part B for Jan 22

SUBJECT.

Invention for "Improvements in or relating to the protection of the walls of enclosures in which reactions take place under high temperatures & pressures".

Sl 10) No 3030 dy 23.11.21 authorising the applicant to file a Specification of the invention left to —

Sl 14) No 4000 dy 24.1.22 notifying the filing of the Specification referred to therein.

14-21

781 (1

G. R. S. 11] 1921

GENERAL AND REVENUE SECRETARIAT.

(Ste)

NOTES.

File No. 56-21.

FILE HEADING.

Inventions for: Improvements in or relating to the protection of the walls of enclosures in which reaction take place under high temperatures & pressures.

From

Messrs. W. Grant Rose, Solicitors, 2 Hastings St. Calcutta.

No. Dated 26-7-21 Received 1-8-21

Diary No. 781	Enclos. Application Duplicate Drawings in Duplicate Spare Copies	Serial No.

BRIEF ABSTRACT OF LETTER.

Forwards an application for leave to file a specification on behalf of his clients La Air Liquide Societe Anonyme Pour L'Etude Et L'Exploitation Des Procedes Georges Claude in respect of the invention referred to therein.

NOTES AND ORDERS.

T. R. R. Schwann
Asst. Sec.

M.O. of Rs 121- Forwarded in Cash Secy on 1.8.21 + Excess amt of Rs 81- in respect of the deed of Assignment will be refunded Subs work Dfts for orders.

1/8/21

NOTES—First Sheet.

31-8-21 14-21 781. (2

G. R. S. III-2]

General and Revenue Secretariat. | I & C File No. 56 of 19 21.

Serial No.	
1/A	Fr Ly offrs No 426 d 15-8-21 Acknowledges rec receipt of Rs 10/-
2	To W. Grant Pote Esq 1268 d 26-8-21 Acknowledges rec receipt of rec appl, returns rec sum of Rs 8/- & states that rec appl is receiving attention
3.	To the Secy, Bd of Rr Advice No 1269 d 26-8-21. Forwards rec appl for opinion
4	To the Supdt of Stamps. No 1270 d 26-8-21. Forwards rec power of attorney & rec deed of assignment for being impressed with Stamp
8	From rec Supdt of Stamps No 886 d 31-8-21 Returns rec documents referred to with 4 duly stamped
9	From rec Secretary, Bd of Rr Advice No 18 d 29-10-21 Returns rec appl recom & states that leave may be granted to file rec Rrecipro Submitted with a draft Ans 7-11-21 Put.

Cup

7/11

NOTE—Contn. sheet.

1/
14-21 2983
781

(3

G. R. S. III-2)

General and Revenue Secretariat. | I & C File No. 56 of 1921.

Serial No.	
10	To Grant Rose Esq^r Calcutta No 3030 dt 23-11-21 Authorises the filing of the Specifications
13	To Grant Rose Esq^r Lette dt 12-12-21 Requests that Appln may be filed Submitted with three drafts. The drafts & fair copies of the 10 require signature. I.P.R. will be duly entered & submitted hereafter H.D.S. 30-12-21. Wd
	R. Done R. Awaited. Rb 2/22
13A	From the Sr. H. Secretary Office 479 dt 6-1-22 Acknowledges the receipt of Rs 30/-
14	To the Compiler, Mysore Gazette. 4000 dt 24-1-22 Notifies the filing of the Specifications
15	To W. Grant Rose Esq^r. Calcutta. 4001 dt 24-1-22 Forwards the copy of No 14 etc.
16	To The Asst, Govt Museum. The Ch. Engineer of Mysore. The Secy, Bd of Secretaries. 4002-4 dt 24-1-22 Forwards copy of Specifications

NOTE—Contn. sheet.

Reg by reg post

14-7-21-22

Dis. 781 (a
&c
928-26

3572

From

Mr. W. Grant Rose
Solicitor

2 Hastings Street
Calcutta.

Dec. 56-21-1

To

GEN & REV. SECTT
1 AUG 1921

The Chief Secretary to the Government of
His Highness the Maharaja of Mysore
General and Revenue Secretariat
Bangalore.

Calcutta 26th. July 1921.

Sir,

I beg to enclose herewith the necessary papers in respect of an application for leave to file a Specification on behalf of my clients L'Air Liquide Societe Anonyme Pour L'Etude Et L'Exploitation Des Procedes Georges Claude in respect of an invention for "Improvements in or relating to the protection of the walls of enclosures in which reactions take place under high temperatures and pressures."

The following papers are enclosed herewith namely :-

(1) Application in duplicate

(2) Drawings one sheet in duplicate

(3) Power of attorney

(4) Assignment

(5) Specification in duplicate

I am sending you a money order for Rs.12 of which Rs.1/- is for the Mysore Government Stamp on the Power and Rs.1/- for the Mysore Government Stamp on the assignment and Rs.10/- being the prescribed fee for the application.

I may mention that the present application is based on my clients Indian application No.5728 of 1920 which was accepted

(6)

COLPCR. The remitter may write here any communication to the payee.

Rs. 12/- As. Amount remitted in respect of Patent application to Dewan of Mysore on behalf of L'Air Liquide etc corresponding to Indian Patent application No 5728 of 1920.

To G & C
W. Grant. Rose, Solicitor
Remitter.
1/8/21 2 Hastings Street, Calcutta.

(14-21)

J.H.C. 86-21

(7)

J.H.C. 86-21-1A

Duplicate.

(To be returned to the General and Revenue Secretariat for being placed in the file.

1. No. 426
2. Date of Remittance 15/8/21
3. From whom received Mr W. Grant Role: Solicitor 2 Hastings St Calcutta
4. Date of receipt of amount in the General and Revenue Secretariat 1.8.21
5. On what account Appn Fee in respect of Pet. Q 21-22
6. Amount (in figures and words) 10/- ten Rupees only
7. The head to which it should be credited.

(To be filled in by the Treasury.)

Secretary to Government,
General Department.

STATE HUZUR REASY. AUG 17 1921 BANGALORE.

The above amount has been duly received and credited in the Treasury on this date.

Date

Hd. Acctt. *Treasurer.* *Try. Officer.*

N. B.—Both the counterfoil and the duplicate to be returned to the General and Revenue Secretariat duly signed by the Treasury Department.

Dy no replied to 781.

Amount and type of stamp required 8/- Ref. 1268/Encl 2 Re dtd 56-21 14-2-21

To

W
~~The~~ Grant Rose Esq.,

Solicitor, 2nd Hastings Street,

Calcutta.

Sir,

I am directed to acknowledge the receipt of your letter dated 26.7.21 forwarding an application for leave to file a specification on behalf of your clients L'Air Liquide Societe Anonyme pour L'Etude Et L'Exploitation Des Procedes Georges Claude in respect of an invention for "Improvements in or relating to the protection of the walls of enclosures in which reactions take place under high temperatures and pressures", and to state that a sum of annas 8/- is returned herewith since the value of the stamp required for assignment is annas 8/- only. I am to add that the application is receiving the attention of Govt.

I have etc.,

for Secy. to Govt.
Edn. Dept.

* based on Indian patent Appn No 5/728 of 20.

Dy 26/8/21

Secy mrs nesk.

13/8

lwl

G. R. S. VI.—s-v/16]

DRAFT. 14-21

(9

SUBJECT.....

.....

.....

Section. 4-C
File No. 56-21
Serial No.

Diary No. of letter replied to.....

No. SC 1269/Rules 3.

To

The Secy. Bd of Sc. Advice
Bangalore

GENERAL AND REVENUE SECRETARIAT,
.( )
, *the*.....191 .

Date of issue. 26/8/21

Signed by..... MVR MSR

Has the honor to forward herewith for report under Sec. 6, Cl. (2) of the Mysore Inventions and Designs Regulation, XI of 1894, an application for leave to file a specification of an invention for "Improvements in or relating to the protection of the walls of enclosure in which reactions take place under high temperatures & pressures" filed from Mr

W. Grant Rose, Solicitor
21 Hastings St. Calcutta
on behalf of his clients
L'Air Liquide Societe
Anony me pour L'Etude
Et L'Exploitation des
Procedes Georges Claude
48 Rue St Lazare. Paris

By Order,

Secretary to Government.
Edn Dept

List of enclosures.

Copied by.....

Examined by.....

WD 02295 -GPB—1,000—2-8-18

G. R. S. VI—s·v/14]

14-21 Amount + letter sent on 31-5-21 amin

(10)

DRAFT.

SUBJECT.....

.....

.....

Section. Ltc
File No. 56-21
Serial No. 4

Diary No. of letter replied to.....

No 1270/Rules 2
& R 31—5—0

GENERAL AND REVENUE SECRETARIAT
( )
, the *191*

To

The Supt of Stamps
Bangalore

Date of issue 26/8/21

Signed by WW MSR

× L' Air Liquide Societe Anonyme Pour L'Etude Et L'Exploitation Des Procedes Georges Claude 48. Rue St Lazare Paris

Has the honor to forward herewith a Power of Attorney executed by ×

constituting Mr W Grant Rose. Solicitor 2 Hastings St. Calcutta.

as Agents in respect of ~~his~~ ~~their~~ invention

for "Improvements in or relating to the protection of the walls or enclosures within which reactions take place under high temperatures & pressures"

and to request that the same may be impressed with the Mysore General Stamp of the value of Rupee One, also herewith forwarded, and the Power returned to this office. Also a deed of assignment executed by Georges Claude in favour of the Company recd to

By Order,

MK 15/9

For ~~*Chief*~~ *Secretary to Government.*

Ed in dept

(5) Sent with half a rupee & may deed be impressed with the Stamp of that value & returned

Ltr 1/10/21

List of enclosures.

Copied by.....

Examined by.....

WD 02293—GPB—1,000—2-2-18

gte 56-21-8 (11

Copy of letter No. 86 dated 31st August 1921 from the Superintendent of Stamps in Mysore, Bangalore to the Secretary to Government, General Department.

I have the honour to forward herewith duly stamped eight Powers o Attorney and eight Deeds of Assignment, forwarded with your ~~xxx~~ number noted in the margin and to request the favour of an acknowledgment.
No. 1266,1270,1272,1275,1279,1282,1285,1287. dated the 26th August 19

Acknowledged vide 15830 6-9-2

.....

5728/20

ASSIGNMENT.

WHEREAS I, GEORGES CLAUDE, of 48, Rue St Lazare, Paris, in the Republic of France, Engineer, am in possession of an Invention for "Improvements in or relating to the protection of the walls of enclosures in which re-actions take place under high temperatures and pressures"

Now therefore know ye that for and in consideration of the sum of five shillings to me in hand paid, the receipt of which is hereby acknowledged, I the said GEORGES CLAUDE, have assigned and transferred and by these presents do assign and transfer unto L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE, of 48, Rue St Lazare, Paris, in the Republic of France, their successors or Assigns, (hereinafter called "the said Assignee") the whole right, title and interest in and to Letters Patent to be obtained for the said Invention from the Government of Mysore the same to be held and enjoyed by the said Assignee to the end of the term or period for which such Letters Patent may be granted, or any prolongation or extension thereof, as fully and entirely as the same could have been held and enjoyed by me had this Assignment not been made.

IN WITNESS whereof I, the said GEORGES CLAUDE, have hereunto set my hand and seal this 22nd day of [illegible] 1920.

SIGNED, SEALED AND DELIVERED
at Paris
in the presence of:-

Pierre Hourlier Engineer at L'air Liquide
residing in Boulogne/Seine 3 Rue alfred Laurent

Gaston Scala Engineer at L'air Liquide
residing in Paris 19. Rue Baron

16-21

9 & c 56-21-D

Copy of bldg no 18 d 29-10-21 from the Secretary, Bd of Sc Advice to the Secretary to Govt, Gl & L

I am directed to return herewith the following 9 applications & to state that leave may be granted to file the specifications of inventions contained therein.

1 × × ×

2 For improvements in or relating to the 14-21 protection of the walls of enclosures in which reactions takes place under high temperatures & pressures.

3 × × ×

15

Indian . 1920.
5728 20

PAPERS FOR APPLICATION FOR

LETTERS PATENT

IN

M Y S O R E

L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE.

14-24

16

A P P L I C A T I O N.

TO THE DEWAN OF MYSORE.

THE APPLICATION of L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE, of 48, Rue St Lazare, Paris, in the Republic of France, for leave to file a Specification under Part 1 of the Mysore Inventions and Designs Regulation, 1894.

1. The Applicants are in possession of an Invention for "Improvements in or relating to the protection of the walls of enclosures in which re-actions take place under high temperatures and pressures" they are the Assignees of the Inventor thereof; and, to the best of their information and belief, the Invention is new within the meaning of Part I of the Inventions and Designs Regulation, 1894, and no circumstance exists which, if the Applicants are authorised to file a specification and file it in accordance with that Part, will disentitle them to an Exclusive Privilege thereunder in respect of the Invention.

The Applicants have applied for a Patent in British India in respect of this Invention No. 5728 dated 10th day of June, 1920.

2. The following is a description of the invention:-

This invention relates to enclosures of the kind in which re-actions take place at a high pressure and temperature and in which protecting means are employed which consist in providing in contact with the walls of the said enclosures, a layer of a liquid which is stable and not very volatile at the temperatures prevailing within the enclosure during the re-action, the liquid being preferably one which is a bad conductor of heat, and which is rendered stationary by means of solid material which is very little or not at all attacked by it and which is also a bad conductor of heat. In the event of one of the re-acting substances being hydrogen, as for example in the synthesis of ammonia the said solid body or the liquid itself may be of such a nature that the hydrogen that may enter the liquid by dissolving therein and by this means reach the wall to be protected, is absorbed.

The present application relates to an improvement on this invention and consists in the use of solid filling material in the form of a tube, or of superposed rings which offer a more effective resistance to the movements of the liquid and of the hydrogen than a mere filling of fragments.

In order that the invention may be clearly understood methods of carrying the invention into effect will now be described by way of example with

reference to the accompanying drawings, these methods also remedying defects in gaseous circulation pointed out in English Patent Application No. 21317 of the 29th August, 1919.

In the drawings:-

Figure 1 is a section of one form of apparatus according to this invention,

Figure 2 is a section of part of a modified form of the apparatus.

Referring to Figure 1 of the accompanying drawings, T is the tubular enclosure to be protected, the cold end being at the bottom. The tube may be arranged with its axis inclined as shown or vertical. T_1 is the metal tube intended for the purpose of confining the half-solid, half-liquid chemically and thermally protective wall. J is the conical joint for the purpose of preventing the liquid from escaping.

The tube T_1 is continued to the other end of the apparatus, but its extremity E at this end is free to provide the clearance necessary to permit of expansion. The catalysis chamber terminates at N_1 below the level N that is to be reached by the liquid. In the annular space between T and T_1, a pile of rings of the selected material, magnetic oxide of iron for instance, is first arranged, and then, the apparatus being closed and heated to the desired temperature, the selected liquid, a potash-soda mixture for instance, is forced up

through the aperture at O, under the action of a slight pressure and heated to the appropriate temperature, until the liquid overflows through the aperture O_1 provided at the desired level, which as well as the aperture O, are then closed, by means of screwed plugs B, B_1. Owing to the fact that the tubular catalysis chamber T_2 reaches a level N_1 lower than the level N of the liquid and that the circulation path of the re-acting gases also does not pass beyond N_1 the temperature of re-action is localised a long way from the end of the tube, and the liquid bath, limited to the level N where a comparatively low temperature prevails, only leaves uncovered portions P of the tube T which are not hot enough to be attacked by H or NH_3. This method of carrying out the invention is advantageous in that the in-coming gases rise between T_1 and T_2 while they are being heated.

As evidence in favour of the use of the potash-soda mixture and of the iron oxide screen it has been ascertained that the first, even under pressures of 1000 atmospheres, only dissolves insignificant quantities of hydrogen, less than one-fifth of its volume reckoned at atmospheric pressure, and that on the other hand fused magnetic oxide of iron, such as is obtained when cutting iron by means of oxy-flames, and notwithstanding its great compactness and its great hardness, is reduced to iron by hydrogen at the pressures employed, and at temperatures below 500° C.

The quantity of water vapour produced is small and in so far as it is not removed by the potash-soda mixture it may be removed by causing it to pass through an absorbent substance, reduced iron for example, before being diluted by the re-acting gaseous mixture. The iron is for this purpose placed at N, in a region where the temperature is still sufficient to effect the reduction of the water vapour.

A modification of the device consisting of rings arranged one over the other is illustrated in Figure 2. The protecting screen may consist of two or more concentric layers of rings V_1, V_2 of material which is a bad conductor of heat, arranged so as to stagger the joints of the layers with respect to one another, in order to obviate any possibility of radial motion of the liquid which surrounds the rings between the two tubes T_1 and T.

It will be observed that cracks or fractures that may be produced in the rings do not in practice impair the effectiveness of the screen they form, the cross-sectional area of the streams of liquid through these fractures or cracks in radial directions being negligible in comparison with the total cross-sectional area which would exist for the passage of the liquid if there were no screen.

HAVING NOW particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, we declare that what we claim is:-

1. The method of calorifically and chemically protecting the chamber in which a chemical re-action takes place at a high temperature and under high pressure from the wall which surrounds it and which resists the pressure, which consists in interposing between the said chamber and the said wall a stable medium of bad thermic conductivity which is liquid or partially liquid at the prevailing temperatures and which is neutral with respect to the bodies present and of low vapour tension, and immersing in said liquid a pile of solid rings of a material which is a bad conductor of heat and which may also be capable of absorbing dissolved hydrogen.

2. A method according to claim 1 in which the pile of rings is arranged in two or more concentric layers which break joint.

3. In the method according to claim 1, means for avoiding the introduction into the re-acting gases of the impurities derived from the attacking of the rings consisting in the interposition between the catalysing substance and the free extremity of the protecting wall of a body capable of absorbing the said

22

impurities.

4. The method of protecting the walls of chambers in which chemical re-actions take place under high temperatures and pressures substantially as described.

5. Apparatus for use in carrying out chemical re-actions at high temperatures and pressures constructed, arranged and operating substantially as described with reference to the accompanying drawings.

3.The Applicants, therefore, apply for leave to file a Specification of the Invention pursuant to Part I of the Inventions and Designs Regulation, 1894.

THE COMMON SEAL of L'AIR LIQUIDE SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE was hereto affixed in the presence of:-

L'AIR LIQUIDE
Ste Anme pour l'Etude et l'exploitation
Rue St-Lazare, 48
PARIS

"L'AIR LIQUIDE"
Ste Anme pr l'Etude et l'Exploitn des Procédés G. Claude
Un Directeur,

We, the Applicants abovenamed, do declare that the facts stated in this Application are true to our knowledge, except as to matters stated on information and belief, and as to those matters we believe them to be true.

Dated this 22nd day of April 1926.

THE COMMON SEAL of L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE was hereto affixed in the presence of:-

L'AIR LIQUIDE
Ste Anme pour l'Etude et l'exploitation
Rue St-Lazare, 48
PARIS

"L'AIR LIQUIDE"
Ste Anme pr l'Etude et l'Exploitn des Procédés G. Claude
Un Directeur,

5721

No of Sheets 1.
Sheet No 1

14

Fig 1.

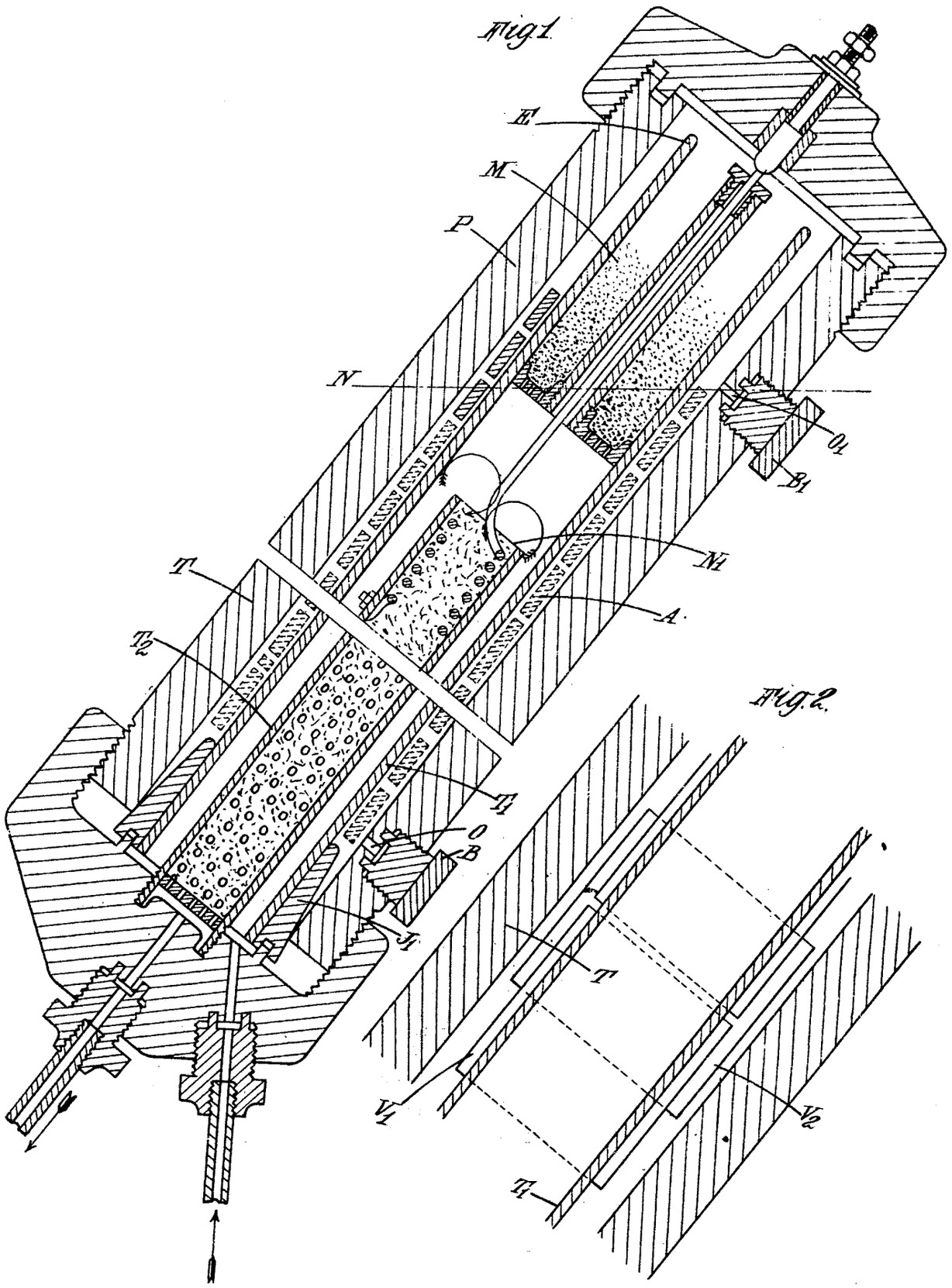

Fig 2.

L'air Liquide Societe anonyme Pour L'Etude et L'Exploitation des Procedes Georges Claude
by their attorney
W Grant Rose

No Ic 3030 / 9+c56-21-10

(25)

G. R. S.VI—s.-v/21]

Government of Mysore.

GENERAL DEPARTMENT.

Register No. 14 **of 192**1-22

Bangalore, the 23/11/ 1921.

WHEREAS an application, based on Indian application no 5728 of 1920 dated the 22nd April 1921 and received on the 18 August 1921, has been submitted under Section 5 of the Mysore Inventions and Designs Regulation, 1894, by L'Air Liquide, Societe Anonyme Pour L'Etude Et L'Exploitation des Procedes Georges Claude, of 48, Rue St Lazare, Paris (hereinafter referred to as "the applicant") for leave to file a specification of an invention for 'Improvements in or relating to the protection of the walls of enclosures in which reactions take place under high temperatures and pressures'

And whereas the applicant has duly complied with all the requirements of Section 5 of the said Regulation;

The Government of Mysore are pleased, under Section 6 of the said Regulation, to authorize the applicant to file a specification of the said invention in accordance with the provisions of the said Regulation.

ORDERED, that the applicant be, and he is hereby, informed accordingly.

By Order of the Government of Mysore,

23/11/21

For Secretary to the Govt. of Mysore,
H.S. General Department.

Certified that the fees prescribed in the fourth schedule to the Mysore Inventions and Designs Regulation, 1894, in respect of the application for leave to file the said specification and of the filing thereof have been paid by the applicant, and that the specification hereinbefore described has been duly filed in accordance with the provisions of Section 8 of the said Regulation on this the 17th day of December 1921.

M. Appaswamy 21.12

For Secretary to the Govt. of Mysore,
H.S. General Department.

19/11

(Section 8 of the Inventions and Designs Regulation, 1894.)

8. (1) If within six months from the date of an order under Section 6, Sub-Section (1), or within such further time, not exceeding three months, as the Government of Mysore, in its discretion, may, on cause shown to its satisfaction and on payment of the fee prescribed in that behalf in the fourth schedule, see fit to allow, the applicant causes a specification of his invention to be filed in manner by this Part required, and the fee prescribed in the fourth schedule in respect of the filing of the specification to be paid, the applicant shall, subject to the other provisions of this Part, be entitled to the exclusive privilege of making, selling and using the invention in the Territories of Mysore, and of authorizing others so to do, for a term of fourteen years from the date of the filing of the specification.

(2) But an exclusive privilege in respect of an invention of a new manufacture shall, notwithstanding anything in Sub-Section (1), cease, if the inventor fails to pay, within the time limited in that behalf by the fourth schedule, any fee prescribed in that schedule in respect of the continuance of the privilege.

(3) If, nevertheless, in any case, by accident, mistake, or inadvertence, an inventor fails to pay any such fee within the time so limited, he may apply to the Government of Mysore for an enlargement of the time for making the payment.

(4) Thereupon the Government of Mysore may enlarge the time accordingly, on payment of the fee prescribed in that behalf in the fourth schedule, and subject to the following conditions, namely :—

(*a*) the time for making a payment shall not in any case be enlarged for more than three months ; and

(*b*) if any suit is instituted in respect of an infringement of the exclusive privilege committed after a failure to make a payment within the time limited for the making thereof and before the enlargement of that time, the Court disposing of the suit may, if it thinks fit, refuse to award or give any damages in respect of the infringement.

W D 02300—GPB—500—24-11-16

28212

2983 (27)

17-12-21.

g to c 56-21-13

DEC 1921

From Mr. W.Grant Rose

Solicitor,

No.2,Hastings Street, Calcutta.

To

The Chief Secretary to the Government of

His Highness The Maharajah of Mysore

General Department

Bangalore, Mysore.

17/12

Calcutta 12th December 1921.

Sir,

Patent Register No.14 of 1921/22.

With reference to your letter No. I C 3036/I & C 60-21-9 dated the 23rd ultimo forwarding the Government order granting leave to file specification in respect of the application of L'Air Liquide &c being Register No.14 of 1921/22 I beg to enclose herewith under registered cover two copies of the specification in respect of such application which together with the two copies of specification already submitted with the application will make four copies thereof I also enclose one copy of the drawings which together with the two copies already sent with the application will make three copies thereof and I beg that the same may be filed in terms of the order granting leave.

I also beg to enclose herewith the Government order No. 3030/I & C 56-21-10 Register No. 14 of 1921/22 dated the 23rd November 1921 so that the certificate at foot thereof certifying that the specification has been filed and the fees paid may be duly signed and the order thus completed returned to me.

I am

(28

I am remitting by money order Rs.180/- of which Rs 30 is for the prescribed fee for filing the specification in respect of this application and the balance of Rs. 150 is for the fees for filing five other specifications noted in the money-order Coupon.

Kindly acknowledge receipt of the papers enclosed herewith and the remittance sent.

I have the honour to be,

Sir,

Your most obedient servant.

W Grant Jr.

Enclo:-

29

Pte 56-21-13AD 2983.

Duplicate.

(To be returned to the General and Revenue Secretariat for being placed in the file.

1. No. 479.
2. Date of Remittance... 6-1-22 Mr. Grant
3. From whom received... Mr. Grant Role, Solicitor, Calcutta
4. Date of receipt of amount in the General and Revenue Secretariat... 17-12-21.
5. On what account... Pilgrim fee in respect of Jan 14-21
6. Amount (in figures and words)... Rs. 30/- ... Rupees Thirty only
7. The head to which it should be credited.

(To be filled in by the Treasury.)

M. Appasamy 6.1.22
Secretary to Government,
General Department.

The above amount has been duly received and credited in the Treasury on this date.

Date 6/1/22

Hd. Acctt. *Treasurer.* *Try. Officer.*

N. B.—Both the counterfoil and the duplicate to be returned to the General and Revenue Secretariat duly signed by the Treasury Department.

ab ✓ 2 copies, 3 dt 15 (30)

GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE.

GENERAL AND REVENUE SECRETARIAT

Bangalore, Dated 24/1/ *1922*

No. RC 4000

SL IH

NOTIFICATION.

(PATENT)

The following specification of an invention has been filed in accordance with Sections 8, 9, 10 and 11 of Regulation XI of 1894 (The inventions and Designs Regulations) and is open to inspection at the Mysore Government Secretariat on application to the ~~Chief~~ Secretary to the Government of His Highness the Maharaja of Mysore, and on payment of a fee of one Rupee.

Genl dept

By L'Air Liquide, Societe Anonyme Pour L'Etude Et L'Exploitation Des Procedes Georges Claude, of 48, Rue Et-Lazare, Paris.

"Improvements in or relating to the protection of the walls of enclosures in which reactions take place under high temperatures & pressures"

By Order,

2.1.22

~~To Chief~~ *Secretary to Government.*

To

The Compiler, Mysore Gazette, for publication.

735

20-1-22

G. R. S. VI—s-v/18

DRAFT.

SUBJECT.....

.....

.....

No.

Section. 9 rc
File No. 56-21
Serial No. 15

Diary No. of letter replied to.....

No IC 6001/2

GENERAL AND REVENUE SECRETARIAT
( )
, *the*.....*191* .

To

W. Grant Rose Esq
Solicitor,
2 Hastings Street.
Calcutta

Date of issue 24/4/22

Signed by Mr J A G

Sir,

With reference to your letter dated 12-1-21 I am directed to forward copy of a Notification No. IC 6000/1re dated 56-21-66 Dy 24-1-22 issued by this Government in regard to the invention filed by you under Regulation XI of 1894 (The Inventions and Designs Regulations.)

The order granting permission to file specification is herewith returned, with the certificate at foot, duly filled in and signed.

I have, etc.,

24/1/22

Secretary to Government.

10-1-22

G. R. S. VI—G/32]

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SUBJECT.....

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Diary No. of letter replied to.....

General and Revenue Secretariat

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, the 191 .

Date of issue 24/1/22

Signed by WR J AG

Section I+C

File No. 56-21

Serial No. 16

No. 4002-4/ one to each

To (1) The Supdt, Govt Museum
(2) The Chief Engineer & Surveyor
(3) The Secy Adfte Advice

Has the honor to forward herewith for record in this office copy of a Specification of an invention for "Improvements in or relating to the protection of the walls of enclosures in which reactions take place under high temperatures & pressures" by Soc Anon pour L'Etude et L'Exploitation des Procedes Georges Claude, of 48, Rue St Lazare. Paris.

B. O.

over. For Secy to Govt of India

Govt

List of enclosures.

Copied by

Examined by

Appl'n 14 9'1921-22 5728/20

S P E C I F I C A T I O N.

TO ALL WHOM IT MAY CONCERN.

BE IT KNOWN that we, L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE, of 48, Rue St Lazare, Paris, in the Republic of France, are in possession of an Invention for "Improvements in or relating to the protection of the walls of enclosures in which re-actions take place under high temperatures and pressures"

and we the said L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE, do hereby declare the nature of the said Invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof, that is to say:-

This invention relates to enclosures of the kind in which re-actions take place at a high pressure and temperature and in which protecting means are employed which consist in providing in contact with the walls of the said enclosures, a layer of a liquid which is stable and not very volatile at the temperatures prevailing within the enclosure during the re-action, the liquid being preferably one which is a bad conductor of heat, and which is rendered stationary by means of solid material which is very little or not at all attacked by it and which is also a bad conductor of heat. In the event of one of the re-acting substances being hydrogen, as for example in the synthesis of ammonia the said solid body or the liquid itself may be of such a nature that the hydrogen that may enter the liquid by dissolving therein and by this means reach the wall to be protected, is absorbed.

The present application relates to an improvement on this invention and consists in the use of solid filling material in the form of a tube, or of superposed rings which offer a more effective resistance to the movements of the liquid and of the hydrogen than a mere filling of fragments.

In order that the invention may be clearly understood methods of carrying the invention into effect will now be described by way of example with

reference to the accompanying drawings, these methods also remedying defects in gaseous circulation pointed out in English Patent Application No. 21317 of the 29th August, 1919.

In the drawings:-

Figure 1 is a section of one form of apparatus according to this invention,

Figure 2 is a section of part of a modified form of the apparatus.

Referring to Figure 1 of the accompanying drawings, T is the tubular enclosure to be protected, the cold end being at the bottom. The tube may be arranged with its axis inclined as shown or vertical. T_1 is the metal tube intended for the purpose of confining the half-solid, half-liquid chemically and thermally protective wall. J is the conical joint for the purpose of preventing the liquid from escaping.

The tube T_1 is continued to the other end of the apparatus, but its extremity E at this end is free to provide the clearance necessary to permit of expansion. The catalysis chamber terminates at N_1 below the level N that is to be reached by the liquid. In the annular space between T and T_1, a pile of rings of the selected material, magnetic oxide of iron for instance, is first arranged, and then, the apparatus being closed and heated to the desired temperature, the selected liquid, a potash-soda mixture for instance, is forced up.

through the aperture at O, under the action of a slight pressure and heated to the appropriate temperature, until the liquid overflows through the aperture O_1 provided at the desired level, which as well as the aperture O, are then closed, by means of screwed plugs B, B_1. Owing to the fact that the tubular catalysis chamber T_2 reaches a level N_1 lower than the level N of the liquid and that the circulation path of the re-acting gases also does not pass beyond N_1 the temperature of re-action is localised a long way from the end of the tube, and the liquid bath, limited to the level N where a comparatively low temperature prevails, only leaves uncovered portions P of the tube T which are not hot enough to be attacked by H or NH_3. This method of carrying out the invention is advantageous in that the in-coming gases rise between T_1 and T_2 while they are being heated.

As evidence in favour of the use of the potash-soda mixture and of the iron oxide screen it has been ascertained that the first, even under pressures of 1000 atmospheres, only dissolves insignificant quantities of hydrogen, less than one-fifth of its volume reckoned at atmospheric pressure, and that on the other hand fused magnetic oxide of iron, such as is obtained when cutting iron by means of oxy-flames, and notwithstanding its great compactness and its great hardness, is reduced to iron by hydrogen at the pressures employed, and at temperatures below 500° C.

HAVING NOW particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, we declare that what we claim is:-

1. The method of calorifically and chemically protecting the chamber in which a chemical re-action takes place at a high temperature and under high pressure from the wall which surrounds it and which resists the pressure, which consists in interposing between the said chamber and the said wall a stable medium of bad thermic conductivity which is liquid or partially liquid at the prevailing temperatures and which is neutral with respect to the bodies present and of low vapour tension, and immersing in said liquid a pile of solid rings of a material which is a bad conductor of heat and which may also be capable of absorbing dissolved hydrogen.

2. A method according to claim 1 in which the pile of rings is arranged in two or more concentric layers which break joint.

3. In the method according to claim 1, means for avoiding the introduction into the re-acting gases of the impurities derived from the attacking of the rings consisting in the interposition between the catalysing substance and the free extremity of the protecting wall of a body capable of absorbing the said